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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,022	10/23/2003	Vladimir Bulovic	MIT-PT10301	1746

3624 7590 03/01/2010

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EXAMINER	
BODDIE, WILLIAM	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
03/01/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,022	BULOVIC ET AL.	
	Examiner	**Art Unit**	
	WILLIAM L. BODDIE	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _04 February 2010_.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1,7,8,12-14,16-18,20,21 and 29-43_ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1,7,8,12-14,16-18,20,21 and 29-43_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In an amendment dated, February 4th, 2010, the Applicant traversed the rejections of claims 1, 7-8, 12-14, 16-18, 20-21 and 29-42; amended claims 29, 33, 36, 39; and added new claim 43. Currently claims 1, 7-8, 12-14, 16-18, 20-21 and 29-43 are pending.

Response to Arguments

2. Applicant's arguments with respect to claims 1, 7-8, 12-14, 16-18, 20-21 and 29-42 have been considered but are not persuasive.

3. On pages 10-14 of the Remarks, the Applicants argue that the combination of Tamura with Yuyama is not obvious as Tamura teaches away from the Yuyama disclosure.

Specifically the Applicants point to paragraphs 8-10 of Tamura which they allege expressly teach away from a foreign application of Yuyama.

4. The Examiner agrees that the Tamura teaches away from some of the disclosures of the Yuyama reference, for example the dependence on a vacant space to adequately provide light to the photodetectors when applied to lighting devices as in the Tamura invention. There is no teaching away, however, of locating the photodetector on a surface opposite the light emitting devices.

The Applicant's argument seems to be that all of the disclosure of the Yuyama foreign application is discredited and not favored by Tamura. This is simply not the case. Yuyama has a similar photodetector placement, along the edge of the substrate (fig. 3b), as the edge placement of a photodetector in Yuyama (fig. 10). Therefore it can

not be assumed that all of the photodetector placements taught by Yuyama are seen as improper for the lighting device of Tamura. Tamura does not expressly disclose that any specific photodetector placements are improper for the proposed invention.

Tamura's main problem with the application of the Yuyama invention design to the lighting device is the larger area, number of LEDs and the light propagation that would occur in the simple vacant space of Yuyama. Tamura cures this dispersion of light by including the transparent resin through which the light propagates towards the photodetector. Furthermore, the figure 2b and 4b embodiments are not seen as that different functionally from the proposed combination resulting in a photodetector mounted to the lower surface of the resin. The results are thus seen as both natural and predictable.

In short, it is important to keep in mind that the sole disclosure from the Yuyama invention that is incorporated into the Tamura is the location of the photodetector on a lower surface of a transparent substrate. Tamura has adopted a photodetector position that is the same as one proposed in the Yuyama application (side placement; fig. 3b-Tamura; fig. 10-Yuyama). Furthermore the figure 2b and 4b photodetector positions show that the positioning of a photodetector on the upper surface of the resin is feasible. There would seem to be little functional difference from instead located the photodetector on the lower surface of the resin. For this reason the combination is seen as both obvious to one of ordinary skill and the results both natural and predictable.

5. On pages 14-18 of the Remarks, the Applicants argue that positioning the photodetector of Henmi on the lower surface of the substrate as taught by Yuyama would not have obviously functioned.

6. The Examiner respectfully disagrees. There is no discussion within Henmi that would lead one of ordinary skill in the art to believe that locating the photodetector on the lower surface of the substrate would destroy the device. There would seem to be no issues with, for example, simply flipping the angle of the reflecting material and positioning the photodetector on the lower surface in the figure 15 embodiment of Henmi.

On page 15 of the Remarks, the Applicants argue that since the Yuyama reference was published prior to the Henmi reference and Henmi did not locate the photodetector on the lower surface as in Yuyama this is evidence that the combination is not proper.

It is well-settled law that contentions that the reference patents are old are not impressive absent a showing that the art tried and failed to solve the same problem notwithstanding its presumed knowledge of the references. See *In re Wright*, 569 F.2d 1124, 193 USPQ 332 (CCPA 1977). Therefore absent a showing that Henmi attempted and failed to locate a photodetector on the lower surface, the combination is seen as proper.

As shown above the rejections are seen as sufficient and are updated to incorporate the newly added limitations but are otherwise maintained.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 7-8, 13-14, 16-17, 20 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (US 2002/0130326) in view of Yuyama et al. (US 6,069,676).

With respect to claim 1, Tamura discloses, an array, comprising:

a plurality of light emitting devices (12-14 in fig. 3a,b) disposed on a transparent substrate (10 in fig. 3b), the transparent substrate having an upper surface (bottom of 10 in fig. 3b) that contacts the light emitting devices, a lower surface distal from the light emitting devices (top of 10 in fig. 3b) and a plurality of side surfaces (right side of 10 in fig. 3b), each of the side surfaces being substantially perpendicular to the upper surface (clear from fig. 3b); and

at least one photodetector (15-17 in fig. 3a/b) that detects light emitted through the substrate from the light emitting devices (para. 45).

Tamura does not expressly disclose that the at least one photodetector is arranged on the lower surface of the transparent substrate.

Yuyama discloses, an array, comprising:

a plurality of light emitting devices (2a-c in fig. 11) disposed under a transparent substrate (4 in fig. 11); and

at least one photodetector (10 in fig. 11) arranged on an opposite surface of the transparent substrate (clear from fig. 11) for detecting light emitted through the substrate from the light emitting devices.

Yuyama and Tamura are analogous art because they are both from the same field of endeavor namely, detecting light emitted by LEDs and compensating the driving of the LEDs based on the detected light.

At the time of the invention it would have been obvious to one or ordinary skill in the art to locate the photosensors of Tamura on the lower surface (top of 10 in fig. 3b) of the transparent substrate of Tamura, as taught by Yuyama.

The motivation for doing so would have been to avoid obstructing the exiting light (Yuyama; col. 6, lines 32-35).

With respect to claim 7, Tamura and Yuyama disclose, the array of claim 1 (see above).

The above embodiment of Tamura fails to disclose locating a photodetector over outer periphery edges of the upper surface.

Tamura further discloses in an alternative embodiment, locating a photodetector (9 in fig. 2a/b) over outer periphery edges of the upper surface (10 in fig. 2b).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the alternative embodiment of Tamura teaching of upper surface photodetectors with the already combined first embodiment of Tamura and Yuyama, which teaches lower surface photodetectors.

The motivation for doing so would have been to achieve a more accurate feedback detection signal.

With respect to claim 8, Tamura and Yuyama disclose, the array of claim 1 (see above).

Tamura further discloses, a feedback circuit (5 in fig. 1) that measures a brightness level for each of the plurality of light emitting devices and varies a voltage applied to individual ones of the light emitting devise to maintain a brightness level of each of the light emitting devices at a substantially constant level (paras. 12-13).

It should be noted that Yuyama additionally discloses, a feedback circuit (11a-c in fig. 5) that measures a brightness level for each of the plurality of light emitting devices and varies a voltage applied to individual ones of the light emitting devise to maintain a brightness level of each of the light emitting devices at a substantially constant level (col. 3, lines 46-54; for example).

With respect to claim 13, Tamura and Yuyama disclose, the array of claim 1 (see above).

Tamura further discloses, a display (col. 1, lines 6-8) comprising an array of light emitting devices.

With respect to claim 14, Tamura discloses, a method for forming an array, comprising:

forming a plurality of light emitting devices (12-14 in fig. 3a/b) disposed on a transparent substrate (10 in fig. 3b), said transparent substrate having an upper surface (bottom of 10 in fig. 3b) contacting the light emitting devices, a lower surface distal from

the light emitting devices (top of 10 in fig. 3b) and at least one side surface (right side of 10 in fig. 3b) substantially perpendicular to said upper surface of the substrate; and

forming a photodetector (15-17 in fig. 3a/b) that detects light emitted through the substrate from the light emitting devices (para. 45).

Tamura does not expressly disclose that the at least one photodetector is arranged on the lower surface of the transparent substrate.

Yuyama discloses, a method for forming an array, comprising:

forming a plurality of light emitting devices (2a-c in fig. 11) disposed under a transparent substrate (4 in fig. 11); and

forming at least one photodetector (10 in fig. 11) arranged on an opposite surface of the transparent substrate (clear from fig. 11) for detecting light emitted through the substrate from the light emitting devices.

At the time of the invention it would have been obvious to one or ordinary skill in the art to locate the photosensors of Tamura on the lower surface (top of 10 in fig. 3b) of the transparent substrate of Tamura, as taught by Yuyama.

The motivation for doing so would have been to avoid obstructing the exiting light (Yuyama; col. 6, lines 32-35).

With respect to claim 16, Tamura and Yuyama disclose, the method of claim 14 (see above).

Tamura further discloses, forming the photodetector on the side surface of the substrate (clear from fig. 3b).

With respect to claim 17, Tamura and Yuyama disclose, the method of claim 14 (see above).

Tamura further discloses, wherein the photodetector includes a plurality of photodetectors (clear from fig. 3a).

It should be additionally noted that Yuyama also discloses, a plurality of photodetectors (fig. 8; for example).

With respect to claim 20, claim 20 is seen as sufficiently equivalent to claim 8. As such claim 20 is rejected on the same merits shown above in claim 8.

With respect to claim 43, Tamura and Yuyama disclose, the array of claim 8 (see above).

Tamura further discloses, a feedback circuit (5 in fig. 1) that measures a brightness level for each of the plurality of light emitting devices and varies a voltage applied to individual ones of the light emitting devise to maintain a brightness level of each of the light emitting devices at a substantially constant level (paras. 12-13).

Tamura further discloses individually detecting groups of light emitting devices (para. 63).

Tamura does not expressly disclose varying the voltage applied independently to the individual light emitting devices.

Yuyama discloses, flashing each light emitting device individually and independently to each result results in a unique voltage application to each light emitting device (col. 5, line 66 - col. 6, line 7).

At the time of the invention it would have been obvious to one of ordinary skill in the art to detect the luminance of each light emitting device of Tamura as taught by Yuyama.

The motivation for doing so would have been the well-known advantage of increased uniformity and constant white balance (Yuyama; col. 2, lines 5-7).

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (US 2002/0130326) in view of Yuyama et al. (US 6,069,676) and further in view of Yamazaki et al. (US 6,424,326).

With respect to claim 12, Tamura and Yuyama disclose, the array of claim 8 (see above).

Tamura further discloses, wherein the feedback circuit (5 in fig. 1) includes a compensation factor generator (5 in fig. 1) for generating a compensation factor for each of the plurality of light emitting devices (para. 40).

Neither Yuyama nor Tamura expressly disclose, a memory array for storing the compensation factor for each of the plurality of light emitting devices.

Yamazaki discloses, a display detecting brightness (fig. 1) and a memory array (204 in fig. 6) for storing a compensation factor for each of the plurality of light emitting devices (col. 12, lines 21-55).

Yamazaki, Yuyama and Tamura are analogous art because they are all directed to a similar problem solving area, namely correcting uneven display luminance.

At the time of the invention it would have been obvious to one of ordinary skill in the art to store the correction factors generated by Yuyama and Tamura in a memory array as taught by Yamazaki.

The motivation for doing so would have been to store an ideal luminance to compare the current state of the display against, thus achieving a more uniform and ideal luminance (Yamazaki; col. 12, lines 28-44).

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tamura et al. (US 2002/0130326) in view of Yuyama et al. (US 6,069,676) and further in view of Cok (US 7,026,597).

With respect to claim 18, Tamura and Yuyama discloses, the method of claim 17 (see above).

Tamura further discloses, that photodetectors are formed on the side surfaces (18 in fig. 3b).

Neither Yuyama nor Tamura expressly disclose, that the photo detectors are formed on each side surface.

Cok discloses, forming photodetectors on each edge of a display (20 in fig. 5).

Cok, Yuyama and Tamura are analogous art because they are from the same field of endeavor namely, placement of photodetectors within a display.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include photodetectors along each side as taught by Cok in the display of Yuyama and Tamura.

The motivation for doing so would have been improved illumination detection (Cok; col. 1, lines 65-67).

11. Claims 29-31 and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henmi et al. (US 7,154,492) in view of Yuyama et al. (US 6,069,676).

With respect to claim 29, Henmi discloses, an array (fig. 12, for example), comprising:

a plurality of light emitting devices (20 in fig. 3-4) formed (clear from fig. 3) on a surface of a transparent substrate (11 in fig. 3-4) the transparent substrate having an upper surface (bottom of 11 in fig. 4 and top of 11 in fig. 3) that contacts the light emitting device (clear in figs. 3-4), a lower surface distal from the light emitting device (opposite of the upper surface defined above) and a plurality of side surfaces (edges of 11 in figs. 3-4); and

at least two photodetectors (23a-b in fig. 11a) arranged on a surface of the transparent substrate for detecting light emitted from the light emitting devices (clear from fig. 4).

Henmi does not expressly disclose, wherein the photodetector is arranged on an opposite surface of the transparent substrate.

Yuyama discloses, an array, comprising:

a plurality of light emitting devices (2a-c in fig. 11) disposed under a transparent substrate (4 in fig. 11); and

at least two photodetectors (10a-b in fig. 8 and 10 in fig. 11) arranged on an opposite surface of the transparent substrate (clear from fig. 11) for detecting light emitted through the substrate from the light emitting devices.

Yuyama and Henmi are analogous art because they are both from the same field of endeavor namely, detecting light emitted by LEDs and compensating the driving of the LEDs based on the detected light.

At the time of the invention it would have been obvious to one or ordinary skill in the art to locate one of the photosensors of Henmi on the opposite surface (top of 10 in fig. 4) of the transparent substrate of Henmi, as taught by Yuyama.

The motivation for doing so would have been to avoid obstructing the exiting light (Yuyama; col. 6, lines 32-35).

With respect to claim 30, Henmi and Yuyama disclose, the array of claim 29 (see above).

Henmi further discloses, at least one additional photodetector (23b in fig. 11) formed over the outer periphery edges of the surface of the transparent substrate (clear from fig. 4).

With respect to claim 31, Henmi and Yuyama disclose, the array of claim 29 (see above).

Henmi further discloses, a feedback circuit (40-43 in fig. 5) that measures a brightness level for each of the plurality of light emitting devices, and varies a voltage applied to individual ones of the light emitting devices to maintain a brightness level of each of the light emitting devices at a substantially constant level (clear from fig. 9).

With respect to claim 33, Henmi discloses an array (fig. 12; for example), comprising a plurality of light emitting devices (20 in fig. 4) disposed over a substrate (11 in fig. 4) having an upper surface (bottom of 11 in fig. 4 and top of 11 in fig. 3) that contacts the light emitting device (clear in figs. 3-4), a lower surface distal from the light emitting device (opposite of the upper surface defined above) and a plurality of side surfaces (edges of 11 in figs. 3-4), and a photodetector (23 in fig. 4) that detects light emitted through the substrate from the light emitting device (clear from fig. 4), wherein at least one light emitting device comprises an OLED (col. 1, line 9), wherein the photodetector is positioned on the upper surface (photodetector, 23, is positioned on same surface, upper surface, in fig. 18 as light emitting devices).

Henmi does not expressly disclose wherein the photodetector is on the lower surface.

Yuyama discloses, an array, comprising:

a plurality of light emitting devices (2a-c in fig. 11) disposed under a transparent substrate (4 in fig. 11); and

at least one photodetector (10 in fig. 11) arranged on an opposite surface of the transparent substrate (clear from fig. 11) for detecting light emitted through the substrate from the light emitting devices.

Yuyama and Henmi are analogous art because they are both from the same field of endeavor namely, detecting light emitted by LEDs and compensating the driving of the LEDs based on the detected light.

At the time of the invention it would have been obvious to one or ordinary skill in the art to locate one of the photosensors of Henmi on the opposite surface (top of 10 in fig. 4) of the transparent substrate of Henmi, as taught by Yuyama.

The motivation for doing so would have been to avoid obstructing the exiting light (Yuyama; col. 6, lines 32-35).

With respect to claim 34, Henmi discloses, the array of claim 33 (see above), further comprising a feedback circuit (40-43 in fig. 5) that measures a brightness level for each of the plurality of light emitting devices, and varies a voltage applied to individual ones of the light emitting devices to maintain a brightness level of each of the light emitting devices at a substantially constant level (clear from fig. 9).

12. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henmi et al. (US 7,154,492) in view of Yuyama et al. (US 6,069,676) and further in view of Yamazaki et al. (US 6,424,326).

With respect to claim 32, Henmi and Yuyami disclose, the array of claim 31 (see above).

Henmi further discloses, wherein the feedback circuit includes a compensation factor generator (s15 in fig. 9) for generating a compensation factor for each of the plurality of light emitting devices (s16-s17 in fig. 9).

Neither Henmi nor Yuyami expressly disclose, a memory array for storing the compensation factor for each of the plurality of light-emitting devices.

Yamazaki discloses, a display detecting brightness (fig. 1) and a memory array (204 in fig. 6) for storing a compensation factor for each of the plurality of light emitting devices (col. 12, lines 21-55).

Yamazaki, Yuyama and Henmi are analogous art because they are all directed to a similar problem solving area, namely correcting uneven display luminance.

At the time of the invention it would have been obvious to one of ordinary skill in the art to store the correction factors generated by Yuyama and Henmi in a memory array as taught by Yamazaki.

The motivation for doing so would have been to store an ideal luminance to compare the current state of the display against, thus achieving a more uniform and ideal luminance (Yamazaki; col. 12, lines 28-44).

13. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henmi et al. (US 7,154,492) in view of Yuyama et al. (US 6,069,676) and further in view of Yamazaki et al. (US 6,424,326).

With respect to claim 35, Henmi discloses, the array of claim 34 (see above), wherein the feedback circuit includes a compensation factor generator (s15 in fig. 9) for generating a compensation factor for each of the plurality of light emitting devices (s16-s17 in fig. 9).

Henmi does not expressly disclose, a memory array for storing the compensation factor for each of the plurality of light-emitting devices.

Yamazaki discloses, a display detecting brightness (fig. 1) and a memory array (204 in fig. 6) for storing a compensation factor for each of the plurality of light emitting devices (col. 12, lines 21-55).

Yamazaki and Henmi are analogous art because they are all directed to a similar problem solving area, namely correcting uneven display luminance.

At the time of the invention it would have been obvious to one of ordinary skill in the art to store the correction factors generated by Henmi in a memory array as taught by Yamazaki.

The motivation for doing so would have been to store an ideal luminance to compare the current state of the display against, thus achieving a more uniform and ideal luminance (Yamazaki; col. 12, lines 28-44).

14. Claims 36-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henmi et al. (US 7,154,492) in view of Yuyama et al. (US 6,069,676) and further in view of Hunter (US 6,356,029).

With respect to claim 36, Henmi discloses an array (fig. 12; for example), comprising a plurality of light emitting devices (20 in fig. 4) disposed over a substrate (11 in fig. 4) having an upper surface (bottom of 11 in fig. 4 and top of 11 in fig. 3) that contacts the light emitting device (clear in figs. 3-4), a lower surface distal from the light emitting device (opposite of the upper surface defined above) and a plurality of side surfaces (edges of 11 in figs. 3-4), and a photodetector (23 in fig. 4) that detects light emitted through the substrate from the light emitting device (clear from fig. 4), wherein at least one light emitting device comprises an OLED (col. 1, line 9), wherein the

photodetector is positioned on the upper surface (photodetector, 23, is positioned on same surface, upper surface, in fig. 18 as light emitting devices).

Henmi does not expressly disclose, wherein the photodetector is on the lower surface, i.e., arranged on an opposite surface of the transparent substrate.

Yuyama discloses, an array, comprising:

a plurality of light emitting devices (2a-c in fig. 11) disposed under a transparent substrate (4 in fig. 11); and

at least one photodetector (10 in fig. 11) arranged on an opposite surface of the transparent substrate (clear from fig. 11) for detecting light emitted through the substrate from the light emitting devices.

Yuyama and Henmi are analogous art because they are both from the same field of endeavor namely, detecting light emitted by LEDs and compensating the driving of the LEDs based on the detected light.

At the time of the invention it would have been obvious to one or ordinary skill in the art to locate one of the photosensors of Henmi on the opposite surface (top of 10 in fig. 4) of the transparent substrate of Henmi, as taught by Yuyama.

The motivation for doing so would have been to avoid obstructing the exiting light (Yuyama; col. 6, lines 32-35).

Neither Yuyama nor Henmi expressly disclose a PLED.

Hunter discloses a PLED display suffering from ageing effects (col. 2, lines 31-37).

Hunter, Yuyama and Henmi are analogous art because they are both directed to solving the same problem namely, degradation of display quality over time in EL devices.

At the time of the invention it would have been obvious to replace the OLED devices of Henmi and Yuyama with the PLED elements of Hunter.

The motivation for doing so would have been the ease of fabrication of PLED elements (Hunter; col. 1, lines 23-26).

With respect to claim 37, Henmi, Yuyama and Hunter disclose, the array of claim 36 (see above).

Henmi further discloses, a feedback circuit (40-43 in fig. 5) that measures a brightness level for each of the plurality of light emitting devices, and varies a voltage applied to individual ones of the light emitting devices to maintain a brightness level of each of the light emitting devices at a substantially constant level (clear from fig. 9).

15. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henmi et al. (US 7,154,492) in view of Yuyama et al. (US 6,069,676) and further in view of Hunter (US 6,356,029) and Yamazaki et al. (US 6,424,326).

With respect to claim 38, Henmi and Hunter disclose, the array of claim 37 (see above).

Henmi further discloses, wherein the feedback circuit includes a compensation factor generator (s15 in fig. 9) for generating a compensation factor for each of the plurality of light emitting devices (s16-s17 in fig. 9).

Neither Hunter nor Henmi expressly disclose, a memory array for storing the compensation factor for each of the plurality of light-emitting devices.

Yamazaki discloses, a display detecting brightness (fig. 1) and a memory array (204 in fig. 6) for storing a compensation factor for each of the plurality of light emitting devices (col. 12, lines 21-55).

Yamazaki, Hunter and Henmi are analogous art because they are all directed to a similar problem solving area, namely correcting uneven display luminance.

At the time of the invention it would have been obvious to one of ordinary skill in the art to store the correction factors generated by Hunter and Henmi in a memory array as taught by Yamazaki.

The motivation for doing so would have been to store an ideal luminance to compare the current state of the display against, thus achieving a more uniform and ideal luminance (Yamazaki; col. 12, lines 28-44).

16. Claims 39-40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Henmi et al. (US 7,154,492) in view of Yuyama et al. (US 6,069,676) and further in view of Bawendi et al. (US 6,501,091).

With respect to claim 39, Henmi discloses an array (fig. 12; for example), comprising a plurality of light emitting devices (20 in fig. 4) disposed over a substrate (11 in fig. 4) having an upper surface (bottom of 11 in fig. 4 and top of 11 in fig. 3) that contacts the light emitting device (clear in figs. 3-4), a lower surface distal from the light emitting device (opposite of the upper surface defined above) and a plurality of side surfaces (edges of 11 in figs. 3-4), and a photodetector (23 in fig. 4) that detects light

emitted through the substrate from the light emitting device (clear from fig. 4), wherein at least one light emitting device comprises an OLED (col. 1, line 9), wherein the photodetector is positioned on the upper surface (photodetector, 23, is positioned on same surface, upper surface, in fig. 18 as light emitting devices).

Henmi does not expressly disclose, wherein the photodetector is on the lower surface, i.e., arranged on an opposite surface of the transparent substrate.

Yuyama discloses, an array, comprising:

a plurality of light emitting devices (2a-c in fig. 11) disposed under a transparent substrate (4 in fig. 11); and

at least one photodetector (10 in fig. 11) arranged on an opposite surface of the transparent substrate (clear from fig. 11) for detecting light emitted through the substrate from the light emitting devices.

Yuyama and Henmi are analogous art because they are both from the same field of endeavor namely, detecting light emitted by LEDs and compensating the driving of the LEDs based on the detected light.

At the time of the invention it would have been obvious to one or ordinary skill in the art to locate one of the photosensors of Henmi on the opposite surface (top of 10 in fig. 4) of the transparent substrate of Henmi, as taught by Yuyama.

The motivation for doing so would have been to avoid obstructing the exiting light (Yuyama; col. 6, lines 32-35).

Neither Yuyama nor Henmi expressly disclose a QDLED.

Henmi does not expressly disclose a QDLED.

Bawendi discloses a QDLED display (title).

Bawendi and Henmi are analogous art because they are both from the same field of endeavor namely, high quality LED based displays.

At the time of the invention it would have been obvious to replace the OLED devices of Henmi with the QDLED elements of Bawendi.

The motivation for doing so would have been the availability of additional color choices (Bawendi; col. 1, lines 35-53).

With respect to claim 40, Henmi and Bawendi disclose, the array of claim 39 (see above).

Henmi further discloses, a feedback circuit (40-43 in fig. 5) that measures a brightness level for each of the plurality of light emitting devices, and varies a voltage applied to individual ones of the light emitting devices to maintain a brightness level of each of the light emitting devices at a substantially constant level (clear from fig. 9).

With respect to claim 42, Henmi, when combined with Bawendi, discloses a display (Henmi; col. 1, line 7) comprising the array of claim 39 (see above).

17. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Henmi et al. (US 7,154,492) in view of Yuyama et al. (US 6,069,676) and further in view of Bawendi et al. (US 6,501,091) and Yamazaki et al. (US 6,424,326).

With respect to claim 41, Henmi and Bawendi disclose, the array of claim 40 (see above).

Henmi further discloses, wherein the feedback circuit includes a compensation factor generator (s15 in fig. 9) for generating a compensation factor for each of the plurality of light emitting devices (s16-s17 in fig. 9).

Neither Bawendi nor Henmi expressly disclose, a memory array for storing the compensation factor for each of the plurality of light-emitting devices.

Yamazaki discloses, a display detecting brightness (fig. 1) and a memory array (204 in fig. 6) for storing a compensation factor for each of the plurality of light emitting devices (col. 12, lines 21-55).

Yamazaki, Bawendi and Henmi are analogous art because they are all directed to a similar problem solving area, namely correcting uneven display luminance.

At the time of the invention it would have been obvious to one of ordinary skill in the art to store the correction factors generated by Bawendi and Henmi in a memory array as taught by Yamazaki.

The motivation for doing so would have been to store an ideal luminance to compare the current state of the display against, thus achieving a more uniform and ideal luminance (Yamazaki; col. 12, lines 28-44).

Conclusion

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM L. BODDIE whose telephone number is (571)272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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